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Attorney's Docket No.:

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Serial No.: 10/566,433

Confirmation No.: 5657

In re Application of:

Daisuke MUKAI, et al.

Group Art Unit: 1793

Filed: January 31, 2006

Examiner: Roe Jesse Randall

For: LOW CO HYDROGEN STORAGE ALLOY

Mail Stop Amendment  
US Patent and Trademark Office  
Customer Service Window  
Randolph Building  
401 Dulany Street  
Alexandria, Virginia 22313-1450

DECLARATION UNDER 37 C.F.R. § 1.132

I, Shinya KAGEI, declare that:

1. I received a Bachelor of Engineering degree in applied science, from Osaka City University, Osaka, Japan in 1994. I have been employed for 15 years as a head of development section of Mitsui Mining & Smelting Co., Ltd.
2. I am a co-inventor of the subject-matter described and claimed in the above-captioned application.
3. I have read the Office Action mailed January 13, 2009. This Declaration is provided in response to the rejection under 35 U.S.C. § 103(a) as being obvious over Kaneko et al. (US 6,261,517).
4. As showing the attached Declaration including Experimental data, it is confirmed that a-axis length and pulverization residual rate do not fall within the range specified in the present invention by reproducing example 1 of Kaneko (US6,261,517).

A-axis length and c-axis length of hydrogen storage alloy are greatly influenced not only by composition of alloy but also casting condition and heat-treatment condition etc. Although component composition of alloy overlaps, there is a high possibility that a-axis length and c-axis length will not be the values which do not overlaps if casting condition and heat-treatment condition etc. are different. Therefore although component composition of alloy overlaps, a-axis length and c-axis length will not be expected to overlap.

5. At the time of the present invention was made, lifetime characteristics such that pulverization residual rate would be 50% or more after 50 cycle test was desired for a battery which was mounted on a hybrid car.

The inventor of the present invention discovered that pulverization residual rate could be 50% or more by specifying a value range of a-axis length and c-axis length at each range of ABx in a specified alloy component.

Such finding is the first discovered by conducting examples in the present specification, characterizing (organizing) a relationship among a-axis length and c-axis length and pulverization residual rate at each range of ABx as showing table 6 to table 10. Moreover, such finding is unknown to date.

Therefore what pulverization residual rate can be 50% or more by specifying value range of a-axis length and c-axis length at each range of ABx is unexpected effect to one skilled in the art.

6. I declare under penalty of perjury under the laws of the United States that all statements made herein based on my own knowledge are true, and all statements made on information and belief are believed to be true. I acknowledge that willful false statements and the like are punishable by fine or imprisonment, or both and may

jeopardize the validity of the application of any patent issuing thereon.

Date: June 22, 2009

Signature: Shinya Kagei  
Shinya KAGEI